

DI 16. (Twice Amended) An isolated polypeptide comprising an amino acid sequence having at least 90% amino acid sequence identity to a sequence from residue 441 to residue 676 as set forth in SEQ ID NO:2, wherein the polypeptide catalyzes oxidation of o-dianisidine (ODA) when complexed with a vanadium ion, and has a molecular weight of between about 40 to about 60 kDa.

REMARKS

I. Status of the Claims

Claims 16, 17, and 20-30 are pending. Claim 16 as amended recites the element of "a molecular weight of between about 40 to about 60 kDa." This amendment is made in response to the final Office Action of December 13, 2002, and the Advisory Action of March 27, 2003, and to address the Examiner's concerns expressed during the April 30, 2003, telephonic interview between the undersigned and the Examiner. Support for the present amendment can be found in the specification, e.g., on page 4 lines 25-26 and page 19 Table 1. No new matter is introduced.

II. Claim Rejections

Claims 16, 17, and 20-30 remain rejected under 35 USC §102(b) for alleged anticipation by the Soedjak reference or the Vreeland reference, or, in the alternative, under 35 USC §103(a) for alleged obviousness over the same references.

Applicant respectfully traverses the rejections in light of the present amendment. The two cited references describe the isolation and enzymatic activity of a naturally-occurring vanadium bromoperoxidase isolated from *Fucus*, but do not disclose its amino acid sequence. This isolated enzyme is described as having a molecular weight of about 64-65 kDa. The present application discloses the amino acid sequence of the full length enzyme, which has 676 amino acids. Further, the present application teaches that the C-terminal region, i.e., the 441-676 segment of SEQ ID NO:2, is the catalytic domain conserved among related vanadium peroxidases. The subject matter of the pending claims after the present amendment is a polypeptide that has at least 90% amino